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PULSE-LINK, INC. 1969 KELLOGG AVENUE CARLSBAD, CA 92008			VO, NGUYEN THANH	
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**Technology Center 2600**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/719,903

Filing Date: November 21, 2003

Appellant(s): SANTHOFF ET AL.

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Peter Martinez  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed December 26<sup>th</sup>, 2006 appealing from the

Office action mailed January 30<sup>th</sup>, 2006.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6,360,075	FISCHER ET AL.	3-2002
6,515,622	IZADPANAH ET AL.	2-2003

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer (6,360,075, cited by examiner) in view of Izadpanah (6,515,622, cited by examiner).

As to claim 1, Fischer discloses a communication system in figure 1 comprising a receiver structured to receive a substantially continuous sine wave carrier signal (see the receiver 130 in figure 2), the signal modulated to contain communication data; a demodulator 132 communicating with the receiver, the demodulator structured to

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demodulate the communication data from the substantially continuous sine wave carrier signal; and a transmitter 134 coupled to the demodulator, the transmitter structured to transmit signals including the communication data. See Fischer, column 3 lines 40-44; column 5 line 10 to column 6 line 37; column 12 lines 38-42. Fischer thus discloses all the claimed limitations except transmitting a plurality of electromagnetic pulses as recited in the claim. Izadpanah discloses converting continuous sine wave carrier signals (see numeral 110) to a plurality of electromagnetic pulses (see numeral 150), and transmitting the plurality of electromagnetic pulses to another station (see figure 1; column 4 line 10 to column 5 line 29). In addition, Fischer suggests that different modulation techniques can be used in his system (see column 12 lines 38-42). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Izadpanah to Fischer, because the ultra wideband pulse system has advantages such as lowered probability of intercept of transmission, reduced multipath fading and radio frequency interference problems (as suggested by Izadpanah at column 1 lines 11-18).

As to claims 2, 4, 25, see Fischer, column 5 lines 10-20; column 12 lines 38-42.

As to claim 3, see Fischer, column 5 lines 10-20.

As to claims 5-8, 19, the combination of Fischer and Izadpanah fails to expressly disclose various modulation/demodulation techniques as recited in the claims. Those skilled in the art, however, would have recognized that the above differences would not render the claims patentable over the applied references for at least two reasons. First, Fischer suggests that different modulation techniques can be used in his system (see

column 12 lines 38-42). Second, the examiner takes Official Notice that the recited various modulation/demodulation techniques are known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the above conventional modulation/demodulation techniques in the combination of Fischer and Izadpanah, so that the repeater 16 in Fischer could link plural systems together.

As to claims 9-10, 12-13, see the wireless medium in figure 1 of Fischer.

As to claims 11, 14, the combination of Fischer and Izadpanah fails to expressly disclose various wired transmission mediums as recited in the claims. Those skilled in the art, however, would have recognized that the above differences would not render the claims patentable over the applied references for at least two reasons. First, the claimed limitation would merely depend on what kind of wired transmission medium one would like to use in his system. Second, the examiner takes Official Notice that the recited various wired transmission mediums are known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the above conventional wired transmission mediums in the combination of Fischer and Izadpanah, in order to improve the quality of signal transmission and reception.

As to claim 15, the combination of Fischer and Izadpanah discloses the claimed limitations (see Izadpanah, column 1 lines 11-21; column 4 lines 42-46).

As to claim 16, the combination of Fischer and Izadpanah discloses the claimed limitations (see Izadpanah, column 7 lines 35-38).

As to claims 17-18, 20, 23-24, the combination of Fischer and Izadpanah discloses the claimed limitations (see Izadpanah, column 1 lines 11-21; column 4 lines 42-46; figure 3B).

As to claim 21, the combination of Fischer and Izadpanah discloses the claimed limitations (see Fischer, column 3 lines 26-28).

As to claim 22, the combination of Fischer and Izadpanah discloses the claimed limitations (see Fischer, figure 6, legend “priority”).

#### **(10) Response to Argument**

On page 4 of the brief, appellant argues that claim 1 does not recite a specific modulation technique, therefore the examiner’s discussion of different modulation techniques is irrelevant. The examiner, however, disagrees. Claim 1 recites “the transmitter structured to transmit a plurality of electromagnetic pulses, with **the pulses configured to include the communication data**” (emphasis added by examiner). Since the communication data are included in the transmitted pulses as recited in the claim, it is a pulse modulation. In order to support the examiner’s position, the examiner would like to direct appellant’s attention to claim 17 which depends from claim 1. Claim 17 clearly recites “an ultra-wide **pulse modulation**” (emphasis added by examiner). Different modulation techniques are also recited in dependent claim 2. Therefore, claim 1 does recite a specific modulation technique. Accordingly, the examiner’s discussion of different modulation techniques is not irrelevant as alleged by appellant.

On page 5 of the brief, appellant further argues that Fischer is completely silent to any teaching or suggestion to use any other type of communication technology, or to

provide a system that can employ two different communication technologies. In response to appellant's argument that the references fail to show certain features of appellant's invention, it is noted that the features upon which appellant relies (i.e., two different **communication technologies**) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The claims do not recite what is called "communication technique". For this reason, appellant's discussion of communication techniques is irrelevant. In addition, the claimed invention of claims 1-25 reads on a system that can employ two different modulation techniques, wherein the first modulation technique is explicitly defined in claim 2, and the second modulation technique is explicitly defined in claim 17. As clearly stated in the rejection to claims 1-25 above, the combination of Fischer and Azadpanah does disclose a system that employs two modulation techniques (see Fischer, figure 2 which shows two modulation techniques such as QPSK modulation and QAM64 modulation. See also column 5 lines 10-53).

On page 6 of the brief, appellant further argues that Izadpanah contains no teaching or suggestion to use any other type of communication technology, or a system that can employ two different communication technologies. In response to appellant's argument that the references fail to show certain features of appellant's invention, it is noted that the features upon which appellant relies (i.e., two different **communication technologies**) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into

the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The claims do not recite what is called “communication technique”. For this reason, appellant’s discussion of communication techniques is irrelevant. In addition, the claimed invention reads on a system that can employ two different modulation techniques, wherein the first modulation technique is explicitly defined in claim 2, and the second modulation technique is explicitly defined in claim 17. As clearly stated in the rejection to claims 1-25 above, the combination of Fischer and Azadpanah does disclose a system that employs two modulation techniques (see Fischer, figure 2 which shows two modulation techniques such as QPSK modulation and QAM64 modulation. See also column 5 lines 10-53).

In response to appellant’s argument that the examiner’s conclusion of obviousness is based upon improper hindsight reasoning (see page 6 of the brief), it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant’s disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

On pages 6 and 7 of the brief, appellant further argues that that there is no suggestion to combine two completely different technologies taught by Fischer and Izadpanah. The examiner, however, disagrees for following reasons.

First, in response to appellant's argument that Fischer and Izadpanah are not combinable because Fischer and Izadpanah use two different communication technologies, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Second, in response to appellant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine references is found in the references themselves (namely, the ultra wideband pulse system has advantages such as lowered probability of intercept of transmission, reduced multipath fading and radio frequency interference problems, as suggested by Izadpanah at column 1 lines 11-18).

For all of the reasons set forth above, the examiner contends that the rejections to claims 1-25 are proper.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Nguyen Vo

*Nguyen Vo*  
4-11-2007

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